DVR4-1100™

4CH Digital Video Recorder

SW242-LP4 / SW242-LPN

User Manual

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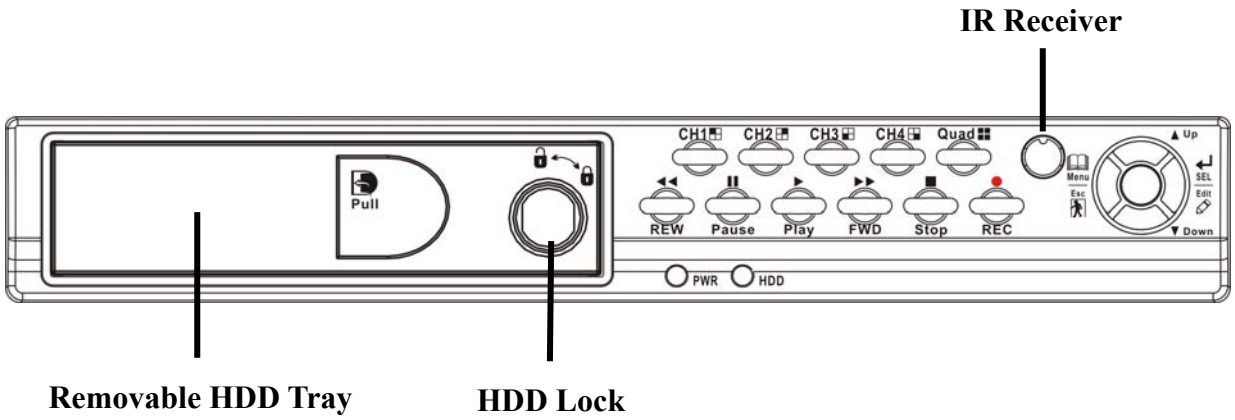
Chapter 1: DVR Features

- 4 Channel BNC Camera Input
- 1 Channel BNC Video Output
- Video Source Option: NTSC / PAL
- Motion Detection with Sensitivity and Area Settings
- Time Schedule Recording / Motion Triggered Recording
- One ATA-100 Hard Disk Interface
- USB 2.0 Back up to computer
- With Remote Control & Removable Hard Drive Tray

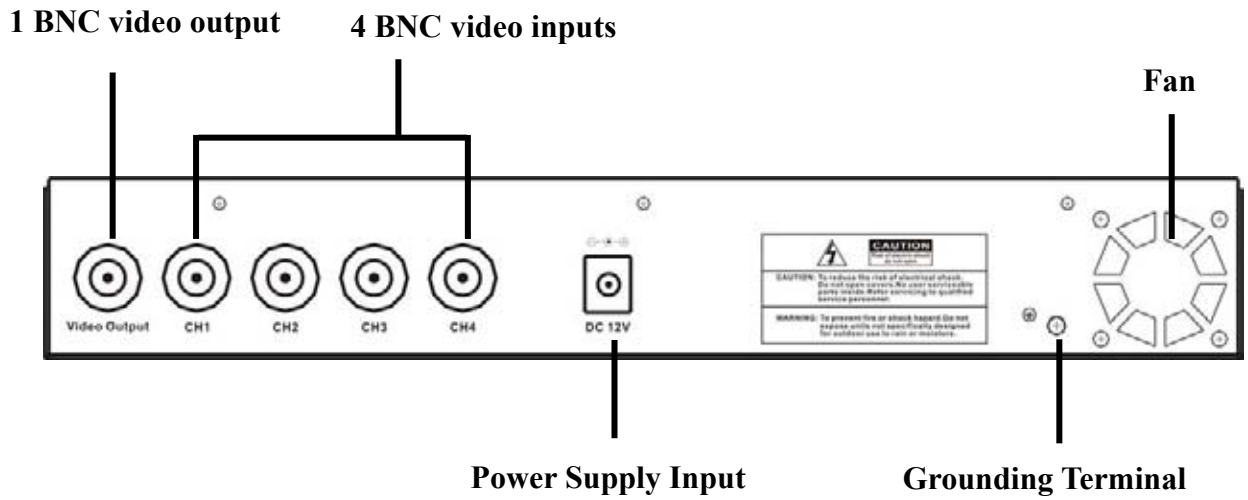
Chapter 2: Layout

2.1 Front Panel



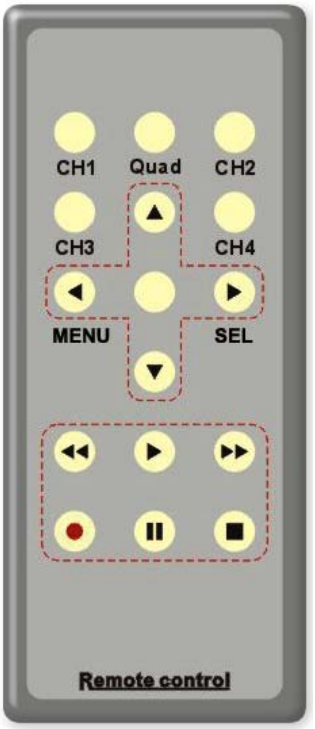
CH1	**Channel #1**	■ Stop	**Stop recording / playing back**
CH2	**Channel #2**	● REC	**Record**
CH3	**Channel #3**	Menu/Esc	**Enter / exit setup menu**
CH4	**Channel #4**	SEL/Edit	**Select / modify item**
Quad	**Quad View**	▲ Up	**Move up / left cursor**
◀◀ REW	**Rewind**	▼ Down	**Move down / right cursor**
▮▮ Pause	**Pause**	PWR	**Power indicator**
▶ Play	**Play recorded video**	HDD	**Hard disk drive indicator**
▶▶ FWD	**Forward**		

2.2 Rear Panel



USB Port is located on the right side of the case.

2.3 Remote Controller *(NOT INCLUDED)*



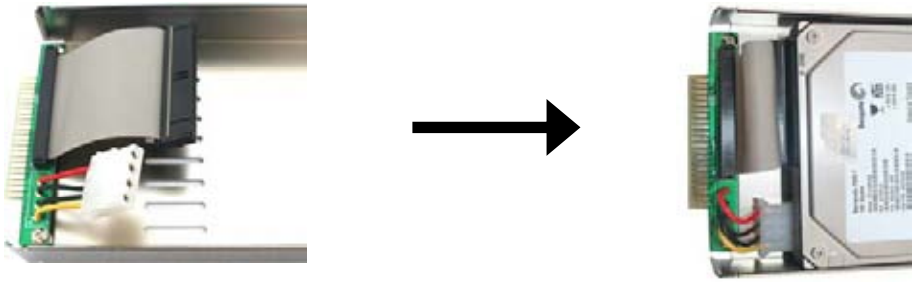
CH1	Select or enlarge Channel #1
CH2	Select or enlarge Channel #2
CH3	Select or enlarge Channel #3
CH4	Select or enlarge Channel #4
Quad	Quad View
◀◀	Rewind
▶	Play recording list
▶▶	Forward
●	Record
▮▮	Pause
■	Stop recording / playing back
Menu	Enter or exit setup menu
▲	Move up / left cursor
SEL	Select / modify item
▼	Move down / right cursor

Chapter 3: Installation

3.1 Installing Hard Drive *(ATA Version, SATA has a Single connector)*

1. Unplug the power supply. Don't install or uninstall HDD when DVR is on!!
2. Slide the HDD tray out of DVR body carefully.
3. Connect the power cord and data cable to hard disk drive.

Make sure the HDD is set to be MASTER according to the hard drive manual.



The 4 pin connection is the DC power cable for HDD, and the wider cable is the standard hard drive IDE type connection.

4. Insert the HDD tray into DVR body tightly.
5. Lock the HDD tray.

   Lock the caddy by turning the key clockwise.

   If you need to unlock the tray, turn the key anti-clockwise.

CAUTION:

1. If you do NOT lock the HDD tray, the DVR system might not function properly.
2. Do not remove the HDD tray while the DVR is on!

3.2 Connecting Camera and Monitor

There are 4 camera inputs and 1 video output with BNC connectors (*Refer to 2.2 Rear Panel).*

3.3 Connecting Power Supply

Please only use the power adapter supplied with the DVR. The standard power supplied to the DVR is DC 12 Voltage, 2 Amperes.

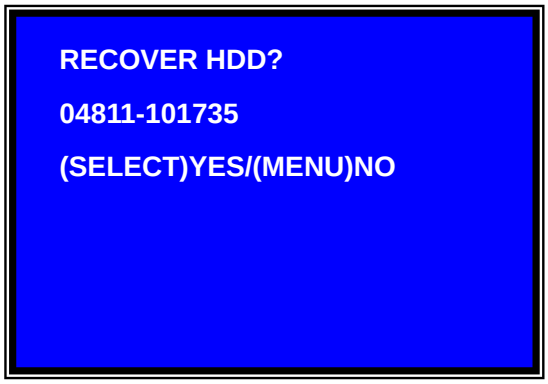
Chapter 4: System Boot

4.1 Detecting Installed Hard Drive

After connecting the power, the system will boot-up and detect the installed hard drive.

On the screen it will show the hard drive information.

4.2 Recovering Lost Data



A power error can cause data to be lost, and the DVR system will automatically recover lost data after power is reconnected.

4.3 Restore Recording Feature

If a power error occurs during recording process, the system will automatically resume recording after power is reconnected.

4.4 Main Screen

While the DVR is running, the monitor will display the view from the cameras as following:

Upper left: Percentage of used hard drive space

Middle: Channel name (CH1 through CH4)

Bottom right: Date and Time

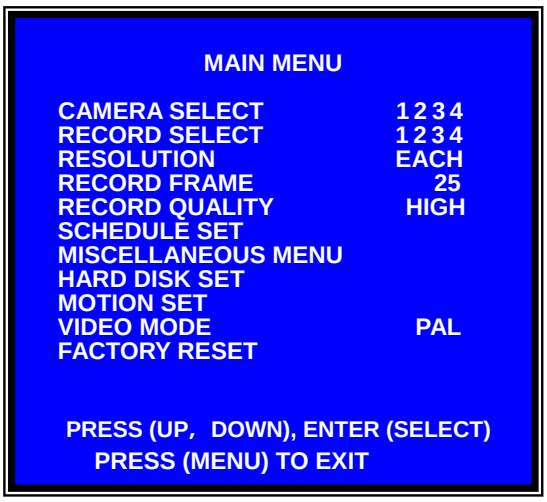
Bottom left: System status. (***Refer to 6.1 Start Recording***)

Chapter 5: DVR Setup

5.1 Setup Menu

Menu Directory

- **MAIN MENU**
  - CAMERA SELECT
  - RECORD SELECT
  - RESOLUTION
  - RECORD FRAME
  - RECORD QUALITY
  - SCHEDULE SET
  - MISCELLANEOUS MENU
    - AUTO RECORD
    - PASSWORD ENABLE
    - PASSWORD CHANGE
    - COLOR SET
    - TIME SET
  - HARD DISK SET
  - MOTION SET
  - VIDEO MODE
  - FACTORY RESET



[**Menu**]: enter system menu

[**▲Up**] and [**▼Down**]: move the cursor

[**↵SEL**]: select/modify settings

[**Menu**]: press again to exit

5.2 Camera Select

The DVR system can display 4 cameras feed in one picture (Quad Mode).

You can configure which camera is displayed.

Press [**↵SEL**] to modify setting, or press [**CH1**], [**CH2**], [**CH3**] and [**CH4**] to set each channel separately.

If a channel is disabled, the system will display "**OFF**" on the monitor, meanwhile, this channel won't be selected to record. (*Refer to 5.3 Record Select*)

5.3 Record Select

Configure which channel is allowed to record.

Note: If no channels are selected, an error message will appear briefly on the screen when record is selected.

5.4 Resolution

There are two modes of resolution for video recording:

EACH Mode:

The DVR compresses and records each video channel separately so you can enlarge a single channel to full screen display and still be recording on all channels. You can also record on specific channels, for example, you can turn off the record function of CH1 and CH2 and then the system will only record video on CH3 and CH4.

Press **[CH1], [CH2], [CH3],** and **[CH4]** enlarge relative channel to full screen display.

In **EACH Mode** you can use the **Auto Switch Function**.

Auto Switch Function:

When the system is in live mode or recording mode, press the [**QUAD**] button and hold for three (3) seconds to make each video channel enlarge to full screen.

The full screen will be displayed for three (3) seconds, including Quad view.

The switch will lasts until any button is pushed.

For example, [■ **Stop**] will stop the switch and may stop the recording depending on Record Schedule Settings (*5.7 Schedule Set*).

QUAD Mode:

The DVR will compress and record all 4 video channels into one file, therefore, you cannot enlarge a single channel to full screen in play back mode or live monitoring mode.

Auto Switch Function is not available in QUAD Mode.

5.5 Record Frame

Record frame will affect the movement of objects in recorded video. More frames per second gives smoother movement and uses more hard disk space.

System default value is 25fps (frames per second) for PAL (NTSC is 30fps), which means the system will record 25 frames per second shared by all cameras. You can set frame rate for PAL to 25,12,8,6,4,3,2,1 frames per second, (NTSC to 30,15,10,7,5,4,3,2,1)

5.6 Record Quality

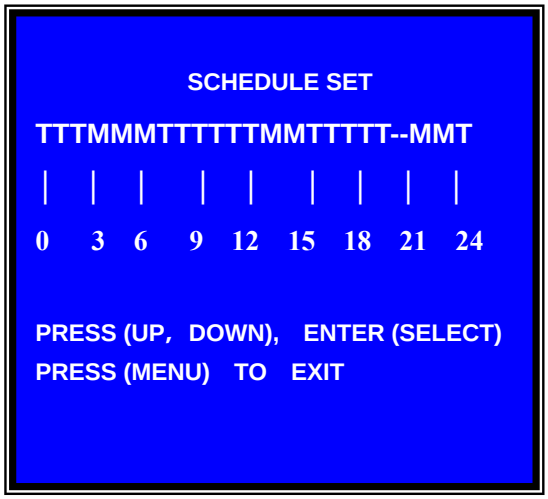
There are three levels of recording quality: High, Normal, and Low.

Higher quality uses more hard drive space.

Record frame rate, record quality and available hard drive space will affect the total recording time of the DVR system.

5.7 Schedule Set

You can set video recording method by Time and Motion Detection Triggered Recording.



"-" No Recording

"T" Time (System Default)

"M" Motion Detection Triggered

[▲**Up**] and [▼**Down**]: To move the cursor

[↵**SEL**]: To modify record method

Numbers along bottom indicate the 24 hours of a day

For example:

If you want to record by motion detecton during 3 to 6 o'clock, please set the time points (3, 4, 5, 6) from to be "M"; if you want to continuous record during 7 to 12 o'clock, please set the time points (7, 8, 9, 10, 11, 12) to be "T".

Both of the two record methods need to be triggered by pressing **[●REC]** button. After pressing **[●REC]** button, if the schedule is set to be "T" at that time, DVR will start to record immediately; if the schedule is set to be "M", DVR will not start record until a motion is captured and detected by system.

Force Record：

When DVR is set to record by motion detection, DVR will not record if there is no motion. If you want to record immediately, please press **[●REC]** button and hold for 3 to 5 seconds, DVR will start force record.

5.8 Miscellaneous Menu-Auto Record

When the function is set to be "**ON**", DVR will be awaked to record automatically by record schedule if DVR is without any manual operations in five (5) minutes.

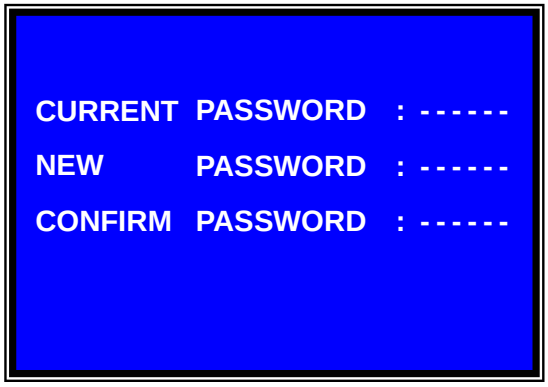
When you choose "**OFF**", DVR will not record until you press the [**●REC**] button.

5.9 Miscellaneous Menu-Password Enable

When this option is set to be "**ON**", you will be required to enter the password if you want to stop recording or enter menu.

System default password: Press [CH1] button six (6) times.

5.10 Miscellaneous Menu-Password Change



All keys can be used as password key **except** the [**Menu**] key, which is used to exit.

If you forget your password, please *refer to 5.16 Factory Reset*.

5.11 Miscellaneous Menu-Color Set

HUE: 0-99
SATURATION: 0-99
CONTRAST: 0-99
BRIGHTNESS: 0-99

[**▲Up**] and [**▼Down**]: move the cursor
[REW]: Increase value
[FWD]: Reduce value
[CH1-CH4, QUAD]: Select channel
[**Menu**]: Exit

5.12 Miscellaneous Menu-Time Set

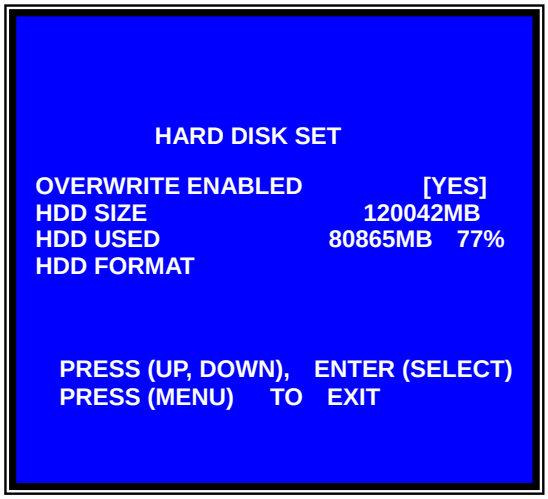
Configure system date and time:

[▲**Up**] and [▼**Down**]: move the cursor

[↵**SEL**]: modify the value

[**Menu**]: exit and save

5.13 Hard Disk Set



OVERWRITE ENABLED:

If you choose "**YES**", recording continues and overwrites previous recordings when the hard drive is full.

If you choose "**NO**", the recording process will stop when the hard drive is full.

HDD SIZE:

Indicates the total capacity of the hard drive installed in the DVR.

HDD USED:

Indicates the space used in the hard drive and the percentage of hard drive space being used.

HDD FORMAT:

If you format the hard drive, it will erase all the data in the hard drive.

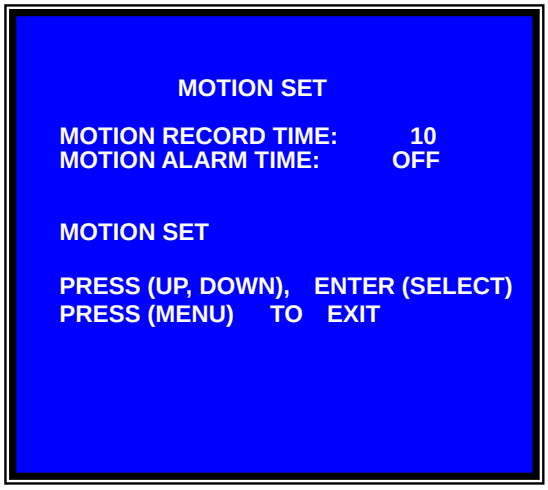
You need to input your password when you want to format the HDD.

Note: When you install a new hard drive in the DVR, please use this function to format the hard drive.

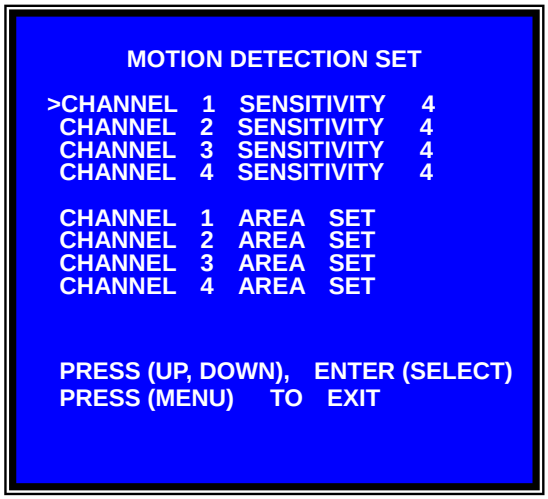
5.14 Motion Set

MOTION RECORD TIME:

This number indicates how many seconds the motion detection recording lasts after the DVR has been triggered by motion.



MOTION SET:


MOTION DETECTION SET
>CHANNEL 1 SENSITIVITY 4
CHANNEL 2 SENSITIVITY 4
CHANNEL 3 SENSITIVITY 4
CHANNEL 4 SENSITIVITY 4
CHANNEL 1 AREA SET
CHANNEL 2 AREA SET
CHANNEL 3 AREA SET
CHANNEL 4 AREA SET
PRESS (UP, DOWN), ENTER (SELECT)
PRESS (MENU) TO EXIT

SENSITIVITY:

Use [**▲Up**] and [**▼Down**] button to select the channel you want to modify, press [**↵SEL**] to adjust sensitivity of motion detection on each channel.

High (1----------9, OFF) Low

When it's "**OFF**", the channel cannot be triggered by motion.

AREA SET:

Use [**▲Up**] and [**▼Down**] button to select the channel you want to modify, press [**↵SEL**] button to enter the sensitive area of each camera. The picture of the selected channel is divided into 144(12*12) blocks, press [**REW**] to move left, press [**FWD**] to move right, press[**▲Up**] and [**▼Down**] to move the cursor up and down, press [**↵SEL**] to set the block active or not.

When the block is transparent, it's active to record. When the block is covered by shadow, it is not active, and motion in this area will NOT be detected.

Make sure ***Record Schedule*** is set to Motion for the times required.

5.15 Video Mode

Select NTSC or PAL video system.

5.16 Factory Reset

Press [↵**SEL**] button to reload factory defaults, then the DVR will reboot, all custom settings (including password) will be restore to default.

Caution: There is no confirming dialog box for this selection after you press [↵SEL] button, please be prudent!

If you forget your password, please keep the system on main screen, and then press [**Pause**] button for ten (10) times, the DVR will reset the system. Then the default password is: [**CH1**] button six (6) times.

If the DVR is recording, please unplug the power supply and uninstall the HDD, then connect power to boot DVR and press [**Pause**] button for ten (10) times.

Chapter 6: Recording

6.1 Start Recording

Press [●**REC**] to start recording (as set in *5.7 Schedule Set*).

DVR will display system information on screen.

1. Hard Drive Usage (Displayed as a percentage)

2. Recording symbol (channel is currently recording)
3. Channel Name
4. Record Resolution (QUAD or EACH)
5. Status (REC, Play, FF1, FF2, FF3, REW, PAUSE)
6. HDD Info. ([M] Master Hard disk)
7. Record Schedule: (T) Continuous (M) Motion Detection (-) No Recording
8. The date and time on the DVR

6.2 Stop Recording

Press [■**Stop**] button to stop recording. If you have already activated the password protection, you need to input the password.

6.3 Recording Time on Hard Drive

Estimated record time based on a 120GB Hard Drive (Quad Mode) in hours:

System	Quality	Frame Rate	30	15	7	1
NTSC	HIGH	20 K Bytes	58	117	251	1748
	NORMAL	15 K Bytes	78	155	332	2330
	LOW	12 K Bytes	97	194	416	2913

System	Quality	Frame Rate	25	12	6	1
PAL	HIGH	20 K Bytes	70	146	291	1748
	NORMAL	15 K Bytes	93	194	388	2330
	LOW	12 K Bytes	117	243	485	2913

You can calculate and estimate record hours by below formula:

120 (G Byte) × 1024 (M Byte) × 1024 (K Byte)
Divided by:
15 (Kbyte/frame) × 7 (frame/sec.) × 60 (sec.) x 60 (min.)

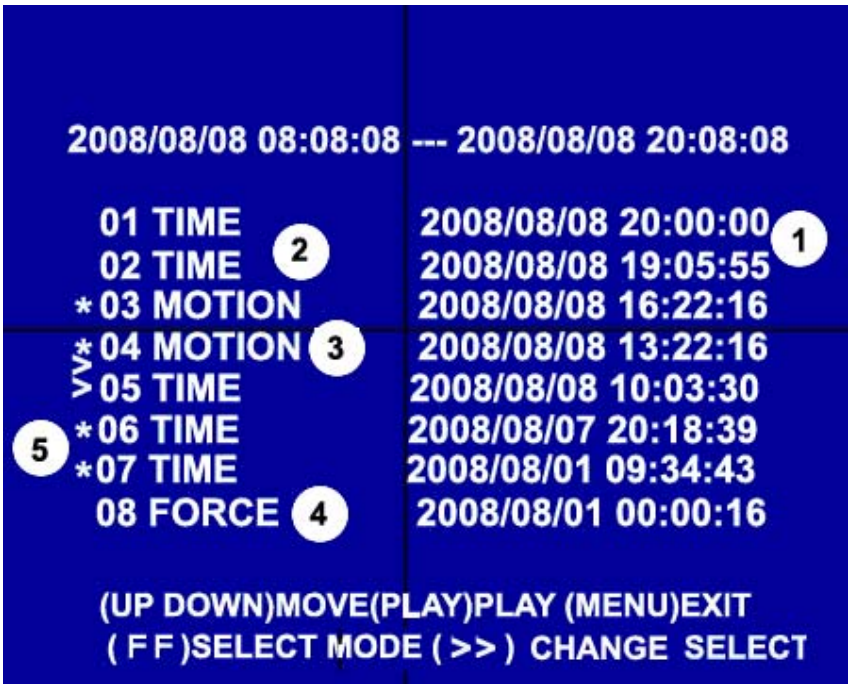
Estimated time would be 332 Hours.

Chapter 7: Playback

Press [▶**Play**] button to play the latest recording.

During playback, press the [**Menu**] button to list all recorded video clips from the hard drive. Newest video will be listed at the top.

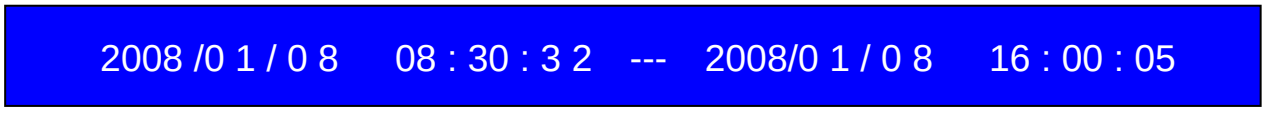
Press [▲**Up**] and [▼**Down**] to move the cursor and select an event, press [▶**Play**] button to start playback.



1. Starting time of the event	**2. TIME: continuous record**
3. MOTION: Motion Triggered event	**4. FORCE: Force Record event**
5. "*" marks un-played video recording	

You can also play recorded video by searching exact date and time as following steps:

1. Press [**FWD**] button to change the select mode
2. Press [▲**Up**] and [▼**Down**] button to select date starting time or ending time
3. Press [↵**SEL**] to edit time value
4. Press [▶**Play**] to play the video



Search Date and Time

Chapter 8: USB Programming

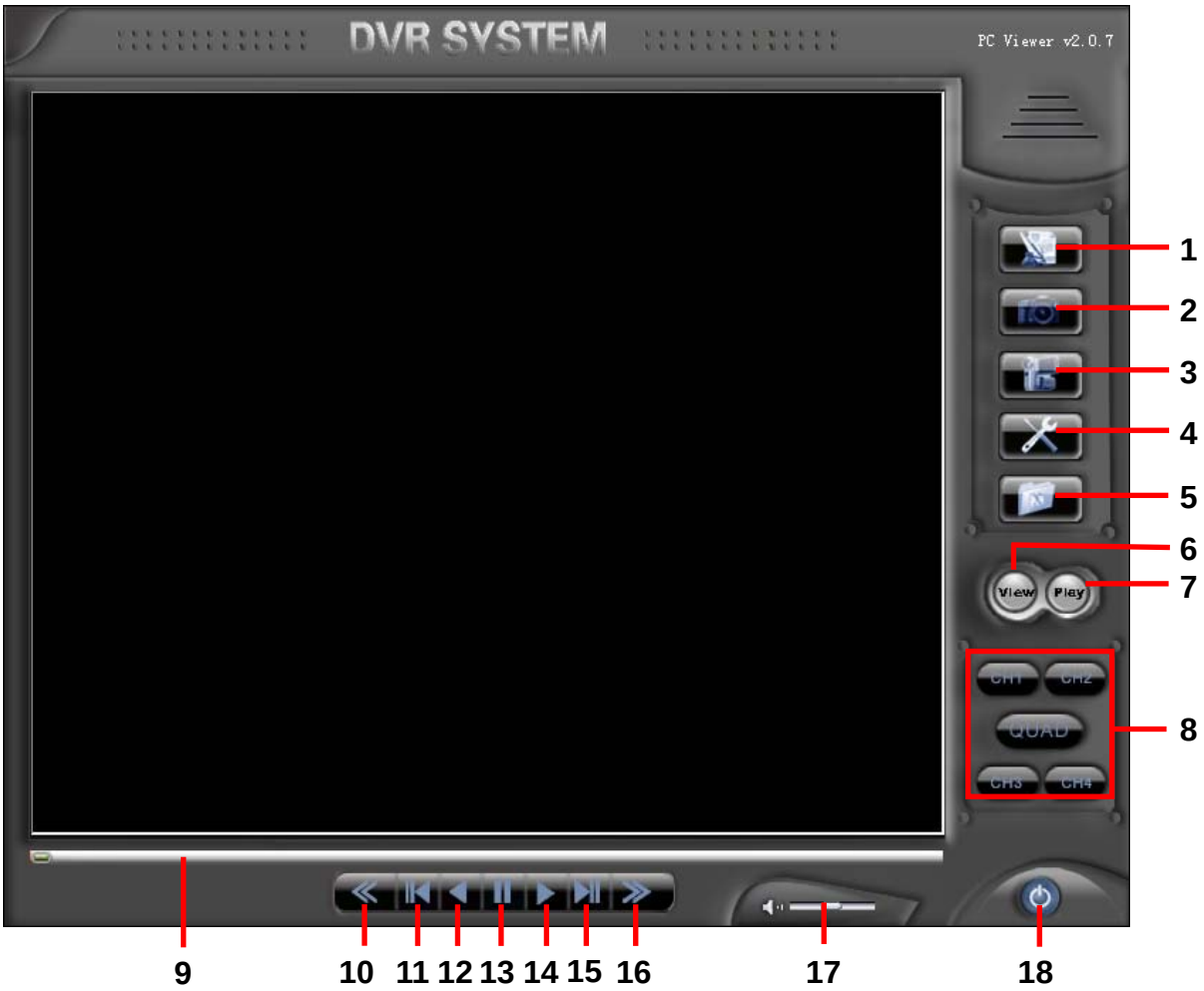
Through connecting DVR and PC, you can use PC Viewer software to play back and backup DVR recorded video.

8.1 PC Viewer Program

1. Put the USB Driver Program CD into your CD-ROM Drive
2. Open CD directory
3. Double click on the "PCViewerInstall.exe" file to install the PC Viewer software
4. Run the installed PC Viewer program

PC Viewer will detect the hard drive installed inside DVR automatically when you connect the USB cable from DVR to PC.

8.2 Program buttons



Item	Remark
1. DVR event list	Open event list recorded in DVR
2. Capture picture	Save an image of current frame
3. Save video clip	Save DVR's video clip to PC in .mys/.avi file
5. Load video file saved in PC	Load .mys file saved in PC
6. DVR Mode*	To switch working mode between PC viewer mode and DVR viewer mode
7. PC Mode*	
8. Channel selection keys	CH1, CH2, CH3, CH4, QUAD
9. Playing scroll bar	
10. Fast backward	Play backward with fast speed
11. Previous frame	Move to previous frame
12. Play backward	Play backward with normal speed
13. Pause	Pause playing
14. Play	Play forward with normal speed
15. Next frame	Move to next frame
16. Fast forward	Play forward with fast speed
17. Volume scroll bar	Not available for this model
18. Exit	Exit PC Viewer

- ✶ **DVR Mode: play video clip save in DVR's HDD.**
- ✶ **PC Mode: play video clip (.mys file) save in PC**

8.3 PC Backup

Press button to open the DVR recorded event list, and then select an event, press to start backup. The video file you want to save in PC can be ".avi" file or ".mys" file.

Chapter 9: Specifications

ITEM		DESCRIPTION	NOTE
Video Format		NTSC / PAL	
Operation System		None	Stand-alone
Camera Input Channel		4 channel Composite BNC	
Video Output Channel		1 channel Composite BNC	
Display Frame Rate	NTSC	120 frames/second	4×30 frames/second
	PAL	100 frames /second	4×25 frames/second
Recording Frame Rate	NTSC	Max.30 fps (Quad)	Quad Mode
	PAL	Max.25 fps (Quad)	Quad Mode
Recording Frame Rate (Each Mode)	NTSC	Each Channel = 30 fps ÷ Number of Cameras	Max. 30 frames/s (Total)
	PAL	Each Channel = 25 fps ÷ Number of Cameras	Max. 25 frames/s (Total)
Record Mode		Continuous, Time Schedule, Motion Triggered.	
Resolution	Display	NTSC: 720×480 PAL: 720✕576	
	Record	NTSC: 320×112, 640×224 PAL : 320✕136, 640✕272	Quad: 640✕224 (total) Each: 640✕224
Video Co mpression Format		Motion-JPEG (12-20K bytes/frame)	Low : 12K Byte Normal: 15K Byte High : 20K Byte
HDD Support		Over 500G Byte	ATA -100 Interface
Estimated Record Length		120GB Hard drive @ 7 frames per second @ Normal Quality (120×1024×1024 Kbyte) ÷ (7×15×60×60) = 332 Hours	
USB		For PC playback & backup	USB 2.0
Remote Control		Included	
Search	Method	Time、Date、Event	
	Full Screen	YES	
Dimension (L × W × H)		250 × 235 × 38mm	

10.1 System Connection Diagram